

CLINICAL TECHNIQUE

Open Window Impression Technique for Maxillary Anterior Flabby Ridge

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ABSTRACT

The open window technique is a special technique for making impression of the denture-bearing area with displaceable ridge. The procedure involves an accurate recording of the limiting and supporting structures by utilizing a two-step impression technique. This clinical technique will help clinicians to record tissue details without displacing the flabby tissue.

Key Words: Denture-bearing area, Flabby tissue, Impression

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Clinical Relevance: Revisiting the steps of open window technique to help dental practitioners in fabrication of maxillary complete denture in patients with fibrous maxillary anterior ridge

INTRODUCTION

Fibrous replacement ridge, most commonly found in long term denture wearers, occurs when hyperplastic soft tissue replaces alveolar bone^{1,2}. The hypermobile tissues can be easily displaced during impression making, that may later lead to tissue recoil and dislodgment of the overlying denture². Wearing of ill-fitting dentures may cause continuous trauma to underlying tissues resulting in development of flabby ridges³. These flabby ridges consist of dense collagen and loose fibrous connective tissue and are most commonly found in the maxillary anterior region⁴. Mucosa of such patients is often highly mobile and loosely attached to the periosteum which can cause difficulty in impression making⁵. Furthermore, this can minimize the quality of prosthesis by affecting its stability and support.

To overcome these problems, many impression techniques have been suggested and used by clinicians to reduce the complexity of this procedure. Among different impression techniques, the window technique is most commonly used in which two distinct impression materials are used⁶. Zinc oxide eugenol impression paste in a custom tray is used for recording the impression of “normal tissues”, whereas a relatively mucostatic impression of the displaceable flabby ridge in anterior maxillary region is recorded with impression plaster or light bodied elastomeric material². The purpose of this technique is to record the hypermobile tissues in resting form whereas the unaffected tissues are recorded in supporting form⁷. Therefore, the aim of this paper is to revisit the steps of open window technique that will help dental practitioners in fabrication of maxillary complete dentures in patients with fibrous maxillary anterior ridge.

Clinical Technique: A 64-year-old female patient presented to Department of Prosthodontics at Dr Ishrat-ul-Ebad Khan Institute of Oral Health Sciences, Karachi with a presenting complaint of fractured acrylic maxillary complete denture. Past dental history revealed that the patient had been wearing the denture for the last twelve years; till the time of its fracture. Her medical and family history were non-significant as she was not hypertensive or diabetic and neither was she taking any medicines for any medical problems. Intraoral examination revealed flabby hypermobile ridge in the anterior region of the maxillary arch (Fig. 1). The opposing arch was restored by a porcelain fused to metal full-arch prosthesis.

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Fig. 1: Displaceable flabby tissue in anterior maxillary region



Fig. 4: Secondary impression recorded with Zinc oxide eugenol impression paste



Fig. 2: Primary cast in dental stone after impression with irreversible hydrocolloid



Fig. 5: Window created in custom tray over region of hypermobile ridge



Fig. 3: Custom tray border molded with green stick impression compound



Fig 6: The completed master impression

Treatment plan was discussed with the patient and she was given the option of both conventional complete denture and implant supported over denture for maxillary edentulous ridge. As the patient was non-affording and was satisfied with her previous denture, she opted to get a new conventional complete denture. Keeping the flabby ridge in mind, it was decided to construct the new maxillary denture employing the “Open Window Technique” during secondary impression.

Primary impression was recorded with a tissue friendly material i.e. irreversible hydrocolloid (Alginate). The impression was then poured with dental stone to obtain the initial cast (fig 2). A self-cure acrylic resin custom tray was fabricated on the maxillary cast with the tray handle in mid palatal region. The borders of the tray were kept 2-3 mm short from the buccal and labial vestibules. Border moulding was performed using green-stick impression compound (Havard, Germany) and secondary impression was carried out using zinc oxide eugenol impression paste (SS White Group,

England) (fig 3 and 4). Once set, the impression was removed from mouth and the flabby tissue in anterior region was marked intraorally with an indelible pencil. The maxillary custom tray was reinserted to transfer the mark to the impression surface. A window was then created around this mark in the custom tray by removing impression material and acrylic resin using scalpel and acrylic trimming burs (fig 5). The modified tray and impression were reinserted in the mouth and light bodied polyvinyl siloxane (I-SiL, Spident, Korea) was syringed on the hypermobile tissues through the window to record them in minimally displaced form. Once the impression-material was set, it was removed and inspected for errors (fig 6). It was then disinfected and dispatched to dental laboratory for further processing.

When special impression techniques are not utilized to record flabby tissues, there are increased chances that the dentures made will be unstable and non-retentive. Making multiple holes on the flabby tissue surface of custom tray, making a window or providing relief by adding wax to decrease the pressure of impression material on the flabby tissue, helps to minimize the displacement of hypermobile tissues⁸. Utilizing these alternatives while making secondary impression can be useful in recording flabby tissues in their anatomic form⁹.

CONCLUSION

The presence of flabby ridges in edentulous patients may cause difficulty in achieving stability and support in complete dentures. Many techniques have been suggested to manage this condition. Open window technique is simple, cost effective, and requires no additional clinical visits. This technique can be easily implemented in dental clinics and requires impression materials that are readily available. Modification of the custom tray with window in anterior region avoids displacement of the flabby tissue and hence improves stability and support of maxillary complete denture.

Conflict of Interest: None declared

Informed Consent: Informed consent was obtained from the participant to be included in the paper.

Authors' contribution: AI, performed the clinical technique, searched for literature and drafted the manuscript. MAL supervised the clinical technique, reviewed the manuscript and made corrections.

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